

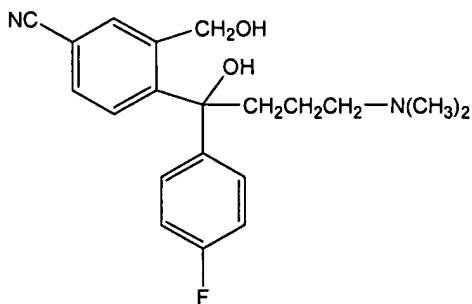
Amendments to the Claims:

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1 – 22 (cancelled)

Claim 23 (new): A crystalline base of Formula I comprising a crystal of a mixture of both S- and R-enantiomer of Formula I



(I), wherein the ratio of S- and R-enantiomer is between 0.5 and 1.5.

Claim 24 (new): The crystalline base of Claim 23, wherein the ratio of S- and R-enantiomer is between 0.8 and 1.2.

Claim 25 (new): The crystalline base of Claim 23, wherein the ratio of S- and R-enantiomer is 1.0 and the crystalline base is a racemic crystalline base.

Claim 26 (new): The crystalline base of Claim 23, wherein its extrapolate starting temperature of the Differential Scanning Calorimetry (DSC) measured melting point is 98.63°C, the peak value is 104.18°C.

Claim 27 (new): The crystalline base of Claim 23, wherein its extrapolate starting temperature of the Differential Scanning Calorimetry (DSC) measured melting point is 51.69°C, the peak value is 59.28°C.

Claim 28 (new): A method for preparing the crystalline base of Claim 23, comprising the steps of:

dissolving a citalopram diol intermediate free base oil substance in a solvent,
crystallizing the citalopram diol intermediate free base oil substance one or more times, and
separating and obtaining a citalopram diol intermediate free base crystal.

Claim 29 (new): The method of Claim 28 wherein the solvent is

a single component or a multi-component solvent that can dissolve citalopram diol intermediate free base, or

a mixture of the single component solvent and the multi-component solvent,
or

a bi-component or multi-component mixture of water and one or more water soluble solvents that can dissolve citalopram diol intermediate free base.

Claim 30 (new): The method of Claim 28 wherein the solvent is a C₁₋₄ alcohol, a bi-component or multi-component mixture of a C₁₋₄ alcohol and water, a C_{>4} ester, a C₃₋₈ hydrocarbon and/or cycloparaffin, or a mixture of C_{>3} ester and/or cycloparaffin.

Claim 31 (new): The method of Claim 30 wherein the solvent is a 60%~90% methanol solution, a 60%~90% ethanol solution, an isopropyl ether, or a mixture of isopropyl ether and hexane.

Claim 32 (new): The method of Claim 31 wherein the solvent is a 70% ethanol solution, a mixture of isopropyl ether and hexane (v/v=1:2), or a mixture of isopropyl ether and heptane (v/v=1:2).

Claim 33 (new): The method of Claim 28 wherein the crystallization temperature is between -40°C and the boiling point of the solvent.

Claim 34 (new): The method of Claim 33 wherein the crystallization temperature is between -20°C and 60°C .

Claim 35 (new): The method of Claim 34 wherein the crystallization temperature is between -5°C and room temperature.

Claim 36 (new): A method for preparing the crystalline base of Claim 23, comprising the step of directly crystallizing a citalopram diol intermediate free base oil substance to obtain a citalopram diol intermediate free base crystal.

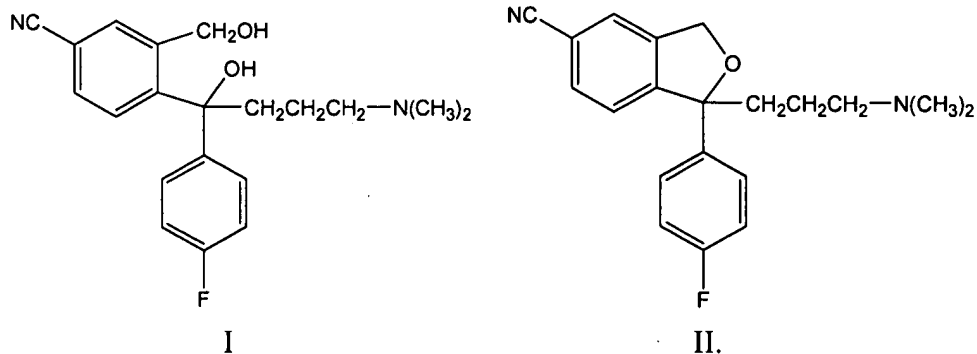
Claim 37 (new): A method for preparing citalopram and its salts, comprising the steps of:

crystallizing a citalopram diol intermediate one or more times in the form of precipitate to obtain a crystal of Formula I,

dissolving the obtained crystal in toluene and processing it with an acid to achieve ring closure by dehydration,

obtaining citalopram of Formula II, and

further converting obtained citalopram into citalopram salts, wherein the Formula I and Formula II are as follows:



Claim 38 (new): A method for preparing S-citalopram and its salts, comprising the steps of:

crystallizing a citalopram diol intermediate one or more times in the form of precipitate to obtain a crystal,

processing the obtained crystal with a chiral acid and subjecting it to resolution to obtain a S-citalopram diol intermediate,

processing the obtained S-citalopram diol intermediate with methyl sulfochloride to achieve ring closure by dehydration,

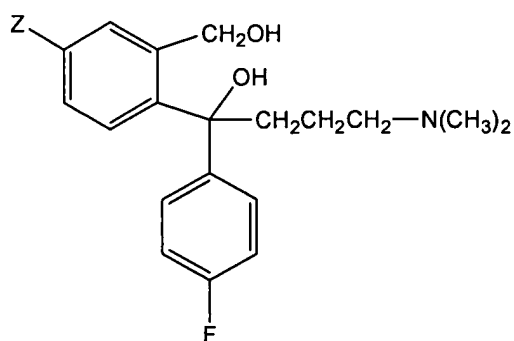
obtaining S-citalopram, and

further converting obtained S-citalopram into S-citalopram salts.

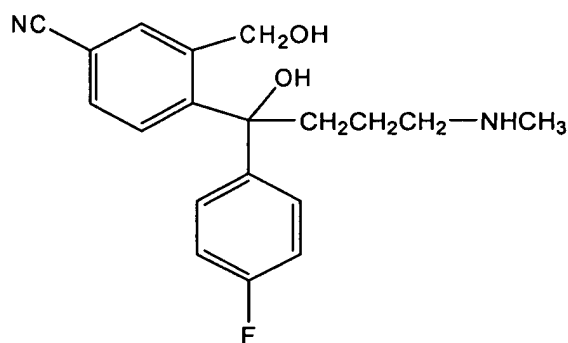
Claim 39 (new): The method of Claim 38 wherein the prepared citalopram diol intermediate of Formula I is resolved to provide R- and/or S-citalopram diol intermediate free base, or their mixture, or their corresponding acid addition salts.

Claim 40 (new): The method of Claim 37 wherein citalopram diol intermediate free base of Formula I is separated from impurities contained in a crude salt or a crude mixture of citalopram diol intermediate base so that it is purified.

Claim 41 (new): The method of Claim 37 wherein one or more impurities of Formula III and/or IV contained in a crude salt or a crude mixture of citalopram diol intermediate base is eliminated:



III



IV

in Formula III, Z is halogen; $-O-SO_2-(CF_2)_n-CF_3$, wherein n is 0~8; $-CHO$; $-NHR^1$; $-COOR^2$; $-CONR^2R^3$; wherein R^2 and R^3 is hydrogen, alkyl, any substitutional aryl or arylalkyl, and R^1 is hydrogen or alkylcarbonyl.

Claim 42 (new): The method of Claim 40 wherein the crude salt or crude mixture of citalopram diol intermediate base is primarily purified before it is precipitated in the form of crystal.

Claim 43 (new): The method of Claim 40 wherein citalopram diol intermediate base is set free from the crude salt or crude mixture and further purified before it is precipitated in the form of crystal.

Claim 44 (new): A method for preparing R- or S-citalopram free base and its acid addition salts, characterized in that: through resolution of a mixture of S- and R-citalopram diol intermediate with more than 50% of one of enantiomers, racemic citalopram diol intermediate free base and R- or S-citalopram diol intermediate free base are obtained, the method comprising the following steps:

- (1) precipitating or crystallizing citalopram diol intermediate in the form of free base from a solution or a solventless oil substance of the mixture;
- (2) separating the precipitate or crystal from mother liquor or the oil substance;
- (3) purifying remaining citalopram diol intermediate optical enantiomers in the mother liquor or the oil substance through resolution and improving their optical rotation;
- (4) separating S-or R-citalopram diol intermediate from the mother liquor, or the oil substance, or converting obtained solventless oil base into S-or R-citalopram through ring closure, and further converting S-or R-citalopram into its acid addition salts; wherein S-citalopram diol intermediate is converted into S-citalopram through a ring closure reaction, R-citalopram diol intermediate is converted into a mixture of S-citalopram and R-citalopram through a ring closure reaction.

Claim 45 (new): A method for the preparation of R- citalopram free base or S-citalopram free base and its acid addition salt, characterized in that: through resolution of a mixture of S- and R- citalopram diol intermediate with more than 50% of one of the

enantiomers, racemic citalopram diol intermediate salt and R- or S- citalopram diol intermediate salt are obtained, the method comprising the following steps:

- (1) precipitating or crystallizing diol intermediate in the form of salt from a solution of the mixture;
- (2) separating the precipitate or crystal from the mother liquor;
- (3) purifying remaining citalopram diol intermediate salt optical enantiomers in the mother liquor through resolution, and improving their optical rotation;
- (4) separating S-or R-citalopram diol intermediate from the mother liquor and converting it into S-or R-citalopram through ring closure, and finally converting into its corresponding acid addition salts; wherein S-citalopram diol intermediate is converted into S- citalopram through a ring closure reaction, R-citalopram diol intermediate is converted into the mixture of S-citalopram and R-citalopram through a ring closure reaction.

Claim 46 (new): The method of Claim 45 for the preparation of R-citalopram free base or S-citalopram free base and its acid addition salts, comprising the steps of:

- (1) precipitating the citalopram diol intermediate in the form of free base from the solution of the mixture of S- and R-citalopram diol intermediate or directly crystallizing the citalopram diol intermediate in the form of free base from the oil mixture of the mixture of S- and R-citalopram diol intermediate;
- (2) separating the precipitate or crystal from mother liquor or the oil mixture; and then
- (3) after separation, subjecting the mother liquor or the oil to precipitation or crystallization, separating S- and R-citalopram diol intermediate from the mother liquor and further subjecting S- and R-citalopram diol intermediate to ring closure to obtain S- and R-citalopram, or the mixture of S- and R-citalopram, wherein the S-citalopram diol intermediate is subjected to ring closure to obtain S-citalopram, and S-citalopram is further converted into its corresponding acid addition salts.

Claim 47 (new): The method of Claim 45 for the preparation of R-citalopram free base or S-citalopram free base and its acid addition salts, comprising the steps of:

- (1) precipitating or crystallizing the citalopram diol intermediate in the form of salt from the solution of the mixture of S- and R-citalopram diol intermediate salt;

(2) separating the precipitate or crystal from the mother liquor; and then

(3) after separation, subjecting the mother liquor to precipitation or crystallization, then separating the S- and R-citalopram diol intermediate salt from the mother liquor and set free as a base, subjecting the base to ring closure to obtain S- and R-citalopram, or the mixture of S- and R-citalopram, wherein the S-citalopram diol intermediate is subjected to ring closure to obtain S-citalopram, and S-citalopram can be further converted into its corresponding acid addition salts.

Claim 48 (new): The method of Claim 45 wherein the mixture of S- and R-citalopram diol intermediate free base or salt is obtained through precipitation or crystallization, and wherein the ratio of S- and R-citalopram diol intermediate is between 0.8 and 1.2.

Claim 49 (new): The method of Claim 48 wherein the ratio of S- and R-citalopram diol intermediate is between 0.95 and 1.05.

Claim 50 (new): The method of Claim 49 wherein the ratio of S- and R-citalopram diol intermediate is 1.0.

Claim 51 (new): The method of Claim 37 wherein citalopram diol intermediate free base crystal or its optical enantiomers as well as their acid addition salts with a purity of over 99.6% are prepared.

Claim 52 (new): The method of Claim 37 wherein through purification, the purity of citalopram free base or S-citalopram free base and their acid addition salts obtained after ring closure is over 99.5%(w/w); and wherein, the purity of S-citalopram free base and its acid addition salts is over 97%(w/w).

Claim 53 (new): The method of Claim 37 wherein the obtained pure citalopram free base or S- citalopram free base forms salt with some pharmaceutically acceptable acids, either through re-crystallization or not, to obtain citalopram salt or S-citalopram salt whose purity is over 99.7%(w/w).

Claim 54 (new): A method of preparing a drug comprising the step of utilizing the citalopram free base or S-citalopram free base or their salts prepared according to the method of Claim 52 in the preparation of the drug.

Claim 55 (new): The method according to Claim 54, wherein the citalopram free base or S-citalopram free base and their salts are converted into routine formulations through routine methods by adding one or more pharmaceutically acceptable excipients.